

1988 mid year

MAY 11 1988

5WD-TUB-9

Mr. Bernard Killian
Acting Director
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Mr. Killian:

Please find enclosed the United States Environmental Protection Agency's Fiscal Year 1988 (FY'88) Mid-Year Evaluation Report on the Illinois Environmental Protection Agency's (IEPA) Underground Injection Control (UIC) program. This report is based upon the findings of our mid-year review of your UIC program, which took place on April 5-7, 1988.

In general, we found that IEPA continues to provide a high level of technical review and compliance monitoring for Class I wells within the State. In addition, IEPA has shown great flexibility and commitment in developing a Land Ban review program. This has resulted in a highly technical, detailed, and thorough review of petition information submitted to date.

It is important to note, that in FY'89 a greater emphasis will be placed upon Class V activities. The Illinois Groundwater Protection Act mandates that Class V wells, which are considered direct routes under the Act, are identified and assessed when they are found to be within specified "set back zones". Since authorities for Class V wells and the implementation of the Act fall within different IEPA divisions, it is imperative that coordination of these efforts occurs and that responsibilities are clearly defined.

In addition, it is important that IEPA assess its program funding needs. In the past, Region V was able to supplement IEPA's base funding, since requests for funding from the Illinois Department of Mines and Minerals (IDMM) were minimal. This will not be the case in FY'89. The IDMM is expected to apply for its full funding allotment, and thus, funds for supplementing other UIC programs will be minimal or nonexistent. It is the State's responsibility to implement an FY'89 program that meets all program requirements as well as National and Regional program priorities. In order to do this, traditional State funding practices may need to be reevaluated. We urge IEPA to do this as soon as possible.

We look forward to the further development of your UIC program, and if you would like further information, please contact me or Lynn Crivello, at (312) 886-2929.

Sincerely yours,

/s/ Charles H. Sutfin

Charles H. Sutfin
Director, Water Division

Enclosure

cc: William Child
William Radlinski
Thomas Cavanaugh

Location required in future

Lps.

bcc: J. Harrison
E. Watters
J. Taylor
L. Crivello
K. Westlake, 5RA

5WD-TUB-9:a:iepa.my:LCvr5/9/88

AMM for ED WATTEAS 5/9/88

LAC for JCT

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Adm 5/10*

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5/11/88*

S

bcc: J. Harrison
E. Watters
J. Taylor
L. Crivello
K. Westlake, 5RA

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PROGRAM
FISCAL YEAR 1988 (FY'88)
MID-YEAR EVALUATION

EXECUTIVE SUMMARY

The Illinois Environmental Protection Agency (IEPA) is responsible for regulating the injection of hazardous and industrial waste into Class I wells, and, in addition, to regulating injection into Class IV and Class V wells. On April 5-7, 1988, Region V representatives conducted a mid-year evaluation of the program to determine the progress of the State in meeting program commitments and to determine the effectiveness of the program in regulating injection of wastes into Class I, IV, and V wells. The following program elements were evaluated:

Administration

Region V representatives found that the State was submitting quarterly reports in a timely manner; however, the Financial Status Report due on January 1, 1988 was not submitted until March, 1988. In other areas, the State has been successful in keeping Region V better informed on permitting and compliance issues.

Permitting

Although IEPA was successful in meeting the number of permit determinations specified in the grant and workplan, the determination for the Velsicol #2 was delayed due to the receipt of new information which indicated that the cementing may not be adequate. It is imperative that the permit review process for the Velsicol well proceed in a timely manner so that a decision can be made in FY'88.

Land Ban

The State has shown a great amount of flexibility, initiative, and technical expertise in evaluating the petition information received to date. Although final regulations and guidance are not available, the State has proceeded to perform evaluations and participate fully in the development of a petition review program.

Compliance

IEPA has conducted Class I well inspections in accordance with the program plan and has reviewed monthly reports and issued compliance letters in a timely manner. To date, the State has been successful in resolving noncompliance promptly. However, the program would benefit considerably if the IEPA had the

authority to administer Administrative Orders (AOs). According to IEPA representatives, AO authority is currently being considered for hazardous waste facilities.

Class V Wells

In FY'87, the Illinois Legislature passed the Illinois Groundwater Protection Act. This piece of legislation was designed to protect water wells from contamination resulting from waste injection, storage, or disposal. The law specifically mandates IEPA to inventory and assess injection wells within "setback zones". However, it is unclear whether this will be done by the Water Division of IEPA which has been given the authority to implement the Groundwater Protection Act, or by the Land Division of IEPA which has the authority for regulating Class V wells. Region V has found that this question has not been addressed by the State.

Quality Assurance

IEPA submitted a revised version of its Underground Injection Control (UIC) quality assurance project plan to Region V for review on February 29, 1988. The plan was approved by the Environmental Sciences Division on March 24, 1988. As new guidelines for UIC quality assurance plans are developed, the State's plan will need to be modified; however, at the present time the IEPA is in compliance with quality assurance requirements.

INTRODUCTION

On April 5-7, 1988, representatives from Region V conducted a mid-year evaluation of the Illinois Environmental Protection Agency's (IEPA) Underground Injection Control (UIC) program. The evaluation included a review of the IEPA files, interviews with IEPA personnel, and discussions concerning the present status of the program and future issues. Overall, the results of the evaluation showed that the State is maintaining an effective program, although future funding and program requirements may present some problems.

PROGRAM ACCOMPLISHMENTS

The FY'88 mid-year evaluation found that the IEPA continues to provide the necessary expertise, management, and regulation to insure an effective program. These achievements include:

Administration

The State has consistently provided accurate quarterly reports in a timely manner. The State's recordkeeping system is computerized so that information on the permitting and compliance status of all wells is readily available. In addition, the State has been successful in keeping Region V informed on issues relating to permit and Land Ban reviews, as well as compliance and enforcement issues.

IEPA has demonstrated a high degree of initiative, commitment, and flexibility in assuming the task of Land Ban petition reviews. The State's reviewers have shown a high degree of understanding and willingness to work with Region V in the review of petitions where final rules and guidance are not available. Initial reviews completed by the State show a high level of expertise and thoroughness.

Recent grant amendments to fund State Land Ban reviews, though not always clearly guided by the United States Environmental Protection Agency direction, have been well thought out and documented.

Permitting

In the program plan submitted by IEPA on October 30, 1987 and approved by Region V on December 9, 1987, the State committed to make three permit determinations in the first two quarters of the year. USI and Velsicol #2 were scheduled for determinations in the first quarter and Cabot #2 was scheduled for the second quarter. The State did make three determinations, although because of recent information casting doubt on the integrity of the cementing of Velsicol #2, the determinations were for LTV (a

major permit modification) Cabot #2, and USI. In addition, a draft permit was issued for Cabot #1 on April 18, 1988.

To date, nine permit determinations have been made. These are:

| Well | Date | Issued/Denied |
|--------------------------------------------|----------|---------------|
| Allied Chemical Danville, Ill. | 3/30/87 | Permitted |
| Cabot #2 Tuscola, Ill. | 2/04/88 | Permitted |
| LTV Steel Hennepin, Ill. | 7/06/87 | Permitted |
| NGPL Hersher, Ill. | 10/09/87 | Denied |
| NGPL St. Elmo, Ill. | 6/03/87 | Denied |
| NGPL (Not Constructed) St. Elmo, Ill. | 9/15/86 | Permitted |
| USI Tuscola, Ill. | 3/01/88 | Permitted |
| Velsicol #1 Clark Co. | 11/08/85 | Denied |
| Velsicol #3 (Not Constructed) Clark Co. | 9/29/86 | Permitted |

Two permit determinations remain to be made. These are Cabot #1 which has been issued a draft permit and Velsicol #2 which is still pending. It must be noted however, that seven of the nine permit determinations are being appealed, and until the appeals are decided by the Illinois Pollution Control Board, the wells will be operated under authorization by rule requirements.

Land Ban

Although final rules and guidance have not been available, IEPA has shown great commitment and flexibility in addressing the Land Ban issue. Region V has contracted with the IEPA which, in turn, has contracted the Illinois State Geological Survey and the Illinois State Water Survey to provide technical review of petition documents. Although to date, only one petition has been received (Allied Chemical), IEPA and the State Surveys conducted a detailed review of the information and provided Region V with a document identifying 135 deficiencies in a timely manner.

Compliance and Enforcement

IEPA conducted the Class I inspections as committed in the FY'88 workplan. UIC inspections are conducted on an annual basis, in addition to State inspections for hazardous facilities. Class I inspections are thorough and well documented.

Operating reports are given adequate review by the Compliance Section following submittal.

Well records and schematics are made available to the field Operations Section (FOS) personnel to assist in evaluation of the well performance during an inspection.

IEPA's Compliance Information Letter (CIL) provides prompt notification to operators of noncompliance, with most violations resolved without the need for formal enforcement action.

Class V Wells

In FY'87 the Illinois Legislature passed the Illinois Groundwater Protection Act. This piece of legislation is designed to protect municipal and private water wells from contamination from wastes stored or disposed of in or near water supply wells. Included in this legislation are provisions for identifying and assessing injection wells within specified "setback zones" surrounding water supply wells. IEPA has already identified approximately 1,708 Class V wells within the State. In FY'88 the State has contracted the Illinois State Geological Survey to compare the data base of Class V wells against that of community water wells to identify those Class V wells in the vicinity of the water supply wells.

Quality Assurance

In the FY'88 grant it was stated that IEPA was to submit a revised approveable quality assurance plan by December 31, 1987. Although the final quality assurance plan was not submitted by the State until February 24, 1988, it was approved by Region V on March 24, 1988.

AREAS OF CONCERN AND RECOMMENDATIONS

Although the State was successful in fulfilling the requirements for an effective UIC program, some areas of concern were identified during the evaluation. They were:

Administration

Although the State has submitted quarterly reports on a timely basis, the Financial Status Reports which are due sixty days after the end of the fiscal year (Office of Management and Budget Circular 102) have not been forwarded promptly. It is necessary for the Region to obtain this information as soon as possible so that unexpended funds can be reobligated to support ongoing UIC activities.

In addition, IEPA historically has not submitted grant applications within the timeframes set forth by Region V. As discretionary funds diminish due to budget cuts and the needs of other UIC programs, it becomes imperative that programs submit their projected workplans and budget needs early so that equitable funding decisions can be made.

Permitting

In the past year, IEPA has made great efforts to produce high quality technically based permit determination. At the present time only one well, Velsicol #2, has yet to receive a draft determination. Although it is understood that this is the result of information recently received casting doubt on the integrity of the well's construction and, therefore, requiring a reevaluation by the State, it should not serve as an excuse for the applicant to extend the process. IEPA needs to insure that a permit determination is made during FY'88 in order to meet program commitments.

Compliance and Enforcement

IEPA is limited to referrals to the State Attorney General or to the USEPA Region V for pursuit of formal enforcement action. While violations of a more serious nature may warrant this type of action, timely enforcement is made easier by use of AOs. IEPA at the present time is not designated this authority. IEPA should actively seek authorization for this capability.

Operator reports still vary widely in the type of information provided and the frequency of reporting. IEPA will not be able to control the operator reports until the wells are permitted. A majority of the permits are under appeal, which allows the wells to continue operation under rule authorized status. This rule authorization limits IEPA's ability to alter reporting frequency or content. IEPA personnel are working toward agreement with the operators to finalize the permits, which will allow IEPA to specify the format and frequency of the reports. IEPA should strive to finalize these permits and set standards in reporting for Class I operators in Illinois.

Class V

Although the Illinois Legislature has passed the Illinois Groundwater Protection Act which mandates an identification and assessment of injection wells within setback zones of water wells, and in addition, which has identified IEPA as the agency responsible for doing this, the IEPA's Land Pollution Control Division, which is currently responsible for Class V wells, has expressed a reluctance to become involved in this program. The IEPA's Water Pollution Control Division is presently implementing the Act; however, since they are not responsible for regulating Class V wells, Region V is concerned that Class V well issues will not be adequately addressed by either Division, or that a duplication of effort will result in a waste of resources. Since both the Illinois Groundwater Protection Act and the Class V well program identified the IEPA as the implementing Agency, it is imperative that a coordinated approach to this issue be developed by IEPA.

NEW ISSUES

After reviewing the performance of the IEPA during FY'88, Region V representatives discussed the FY'89 program guidance. During this discussion, several issues were raised. These included the following:

Class V

As previously stated, there is some uncertainty in the Land Division as to how the Class V provisions of the Illinois Groundwater Protection Act will be addressed. In the FY'89 guidance, Region V set forth measures for identifying and assessing Class V wells within "setback zones". Land Division representatives expressed reluctance to commit to a large scale Class V effort due to the cost involved. However, since this is mandated by State law, Region V feels that it is an issue that needs to be addressed. It appears though, that coordination between the Land and Water Divisions needs to occur and that decisions on who will be responsible for Class V issues must be addressed by the Agency as a whole.

Land Ban

It is evident that Land Ban petition reviews will continue into FY'89. In the FY'89 guidance, Region V has included several Land Ban activities. It is critical, therefore, that the State receive adequate funding and training to carry out this program requirement.

Enforcement

The present system of referring cases to the Illinois Attorney General's Office for hearing before the Pollution Control Board is a slow and cumbersome process sometimes taking years. Although the IEPA has been successful in resolving cases of noncompliance fairly quickly without referral, it would be beneficial to the program if IEPA were granted AO authority. This, however, is only possible through legislative action. Since changes to the IEPA regulatory program are currently being addressed by the Pollution Control Board and the Governor's Office, there is a possibility that AO authority could be granted to the Agency. Region V would endorse this action.

Funding

IEPA representatives expressed concern over the proposed level of funding for FY'89. Although the funding level has not changed significantly, the fact that the Illinois Department of Mines and Minerals is now using their full allotted funding, which in past years was given to IEPA, has resulted in a loss of available funds for IEPA's 1422 program. IEPA representatives stated that it would not be possible for the State to administer the Class I well program and initiate a major Class V well program given the proposed funding level. Historically, IEPA has provided the minimum required 25 percent matching funds, and has indicated that State funding over that level is not possible. In the future, it may be necessary for IEPA to make some serious decisions regarding their administering of UIC programs. It appears that either additional State funding or a change in program administration may be necessary.

April 21, 1988

Illinois Environmental Protection Agency
UIC Audit for Mid-Year FY'88

La Nita Y. Marrable
Environmental Protection Specialist, PMU

Lynn Crivello
Illinois State Coordinator, PMU

PARTICIPANTS

USEPA

John C. Taylor
Lynn Crivello
Steve Burton

Harlan Gerrish
John De Lashmit
La Nita Y. Marrable

IEPA

William Radlinski
Bharat Mathur
Thomas Cavanagh

Edwin C. Bokowski
Harry Chappel
John P. Richardson

INTRODUCTION

On Thursday, April 7, 1988, participants of the United States Environmental Protection Agency (USEPA) and the Illinois Environmental Protection Agency (IEPA) met to discuss and evaluate the IEPA Mid-Year Performance.

BACKGROUND

While previously visiting IEPA on March 11, 1988, I met with Mr. Thomas Cavanagh and Mr. William Radlinski to discuss the status of IEPA Class V inventory.

At this time, they were very concerned about the numbers reported for their Class V inventory and how it affects their future funding for their Class V program. I assured Mr. Radlinski that I would address his concerns and research the difference in the numbers reported and the numbers reflected in their current data base.

After researching the Class V inventory data sheets and printouts for IEPA, I discovered several discrepancies. For example:

The initial number of Class V wells reported by IEPA 1708

The total number of Class V well showing in their data base ... 529

TOTAL NUMBER OF IEPA CLASS V DISCREPANCIES 1179

On April 7, 1988, during the Mid-Year evaluation for IEPA, I presented my theory regarding the discrepancies with the numbers. After researching the computer printouts and the data entry sheets, I noticed that any number greater than two digits, (i.e. >99), the computer did not accept these numbers. I began to notice that the numbers were registering as follows:

793 ... 78
111 ... 11
200 ... 20

This quite naturally caused the Class V inventory numbers to decline.

I pointed this out to IEPA during the evaluation that the field was probably not large enough to accept a three character field. I asked if it was possible that the data base had been changed or converted. This will usually create this type of a problem.

After speaking with Mr. Michael Halwer, I was informed that the original data base was R Base and he converted the current data base to B Base. After he called up the data base he had not allowed more than two characters in the field for the total number of wells.

It was agreed that he would transfer the original material allowing a larger field, therefore allowing room for the three digit characters. As a result, IEPA now shows a total of 1,170 Class V injection wells in the state of Illinois. A very large difference of 1270 wells!

cc: Taylor ✓
Watters
Harrison



217/782-3397

May 26, 1988

Charles H. Sutfin, Director
Water Division 5WD-TUB-9
U.S. Environmental Protection Agency
Region V
230 South Dearborn
Chicago, Illinois 60604

Dear Mr. Sutfin:

This is in response to your letter and Mid-Year Evaluation of our FY88 UIC program sent to me on May 11, 1988.

I am pleased that you and your staff have found that IEPA provides a high level of technical review and compliance monitoring for Class I wells and that we have shown flexibility and commitment in developing a Land Ban review program.

On Page 1 of your Executive Summary under Compliance you state that our UIC program would benefit considerably if the IEPA had the authority to administer Administrative Orders. We agree with you. As you know, however, the issue of Administrative Order authority for IEPA has been a particularly difficult one given the organizational arrangement of Illinois' environmental and enforcement agencies. We will continue to pursue the authority and will appreciate your support.

On Page 2, under Class V Wells, in response to your question about the inventory of potential contamination sources (injection wells) within "setback zones" it is a Public Water Supply objective that will be carried out as part of the State-funded groundwater protection program.

On Page 5 of the Mid-Year Evaluation under Class V Wells, the last sentence should be deleted since the State Geological Survey has opted not to contract with IEPA for this work.

On Page 8, under Funding your last sentence states that "either additional State funding or a change in program administration may be necessary." I must reiterate the concern expressed by our staff that the resources available to us for the UIC program are stretched as far as they can go. Realistically, we do not expect an increased level of State funding for

Charles H. Sutfin
May 26, 1988
Page 2

UIC activities. We have been informed that we will receive about \$80,000 in federal grant funds, a level that is not sufficient to support the necessary Class I, Class V, and Land Ban activities requested by U.S.EPA. I hope we will be able to work together to address this concern.

Sincerely,

A handwritten signature in cursive script that reads "Bernard P. Killian". The signature is fluid and extends to the right.

Bernard P. Killian
Acting Director

BPK10:TEC:BR/dlh/16

cc: William Child
E. W. Radlinski
Thomas Cavanagh
Michael Cook

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5WD-TUB-9

Mr. Bernard Killian
Director
Illinois Environmental Protection Agency
2220 Churchill Road
Springfield, Illinois

Dear Mr. Killian:

During the week of October 11-14, 1988, my staff conducted its end-of-year evaluation of the Illinois Environmental Protection Agency's (IEPA) Underground Injection Control (UIC) program. The purpose of the evaluation was to review the progress that your UIC program has made in the regulation of Class I, IV and V wells during Fiscal Year (FY) 1988. During the program review, special attention was paid to the files concerning Class I hazardous waste injection facilities since Region V will need to make decisions on land ban petitions for these facilities during FY 1989 and FY 1990. The evaluation was also concerned with the progress made in program administration, Class I permitting and enforcement, data management, and the Class V program.

In general, the UIC program was found to be making progress in FY 1988. In particular, the Class I permitting program was successful in exceeding its program goals of four permit determinations for FY 1989 by making three permit determinations and two determinations on major permit modifications. In addition, the State continues to ensure compliance through an effective field inspection program, and through actions taken by enforcement personnel.

However, Region V is concerned about the loss of key UIC personnel in FY 1988 and the apparent variation in permit evaluations among the permit review staff. In FY 1988 new personnel were assigned to UIC permit reviews and enforcement to replace UIC staff that were transferred to other areas. Since these reviewers are relatively inexperienced in UIC issues, it is important that they receive adequate training and guidance as well as more intensive oversight.

During the review, Region V found that each IEPA UIC permit reviewer was assigned a land ban petition to review exclusively on his/her own. Region V has found that a team approach is generally better than individuals working on their own. Given the relative UIC inexperience of the new permit reviewers, it would make sense to assign one person as lead reviewer for each petition, and the other permit reviewers as members of the review team. The lead reviewer would be responsible for compiling comments, and communicating with the facility, the United States Environmental Protection Agency, the Surveys and other parties. Region V has found this approach to

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be extremely valuable, while not necessarily consuming much review time for the assisting members of the team. Since only one petition is under review at this time, and only one additional petition is expected in FY 1989, the review staff should have sufficient time to review each document.

A copy of the end-of-year evaluation report is enclosed. We look forward to continued progress in your UIC program during FY 1989. If you have any questions or comments, please feel free to contact John Taylor, of my staff, at (312) 886-4299.

Sincerely yours,

Charles H. Sutfin

Charles H. Sutfin
Director, Water Division

cc: Child (IEPA)
Radlinski (IEPA)
Cavanaugh (IEPA)

bcc: Sutfin
Bryson
Harrison
Watters
Taylor
Gerrish
Hudak
Moretta
Crivello

5WD-TUB-9:L.Crivello:lc/vr:12/12/88:iepaey:lynn's disk

Sw 12/21 *12/14/88* *JLS 12/13/88*

10/21/88 *12-16-88* *5WD-TUB 12/21/88* *12/21/88*

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PROGRAM
FISCAL YEAR (FY) 1988
END-OF-YEAR EVALUATION**

EXECUTIVE SUMMARY

During the week of October 11-14, 1988, an end-of-year evaluation was conducted at the Illinois Environmental Protection Agency (IEPA). Representatives of Region V visited the IEPA offices in Springfield, Illinois to review the progress made in the IEPA's Underground Injection Control (UIC) program. Because Region V will be making decisions on land ban petitions during FY 1989, this end-of-year evaluation included a particular focus on activities at Class I hazardous waste facilities. Other program issues which were reviewed included:

1. Class I permitting;
2. the Class V program;
3. enforcement and compliance issues; and
4. data management.

As reported in the FY 1988 midyear evaluation, a number of components of the IEPA UIC program continued to make progress during this fiscal year. All Class I wells have been permitted with the exception of Velsicol #2, which is currently part of a Superfund action. IEPA conducted Class I well inspections in accordance with the program commitments and has reviewed monthly reports and issued compliance letters in a timely manner. The State has been successful in resolving noncompliance promptly.

During FY 1988, the IEPA continued its contractual agreement with the Illinois State Geological and Water Surveys. These agencies have provided excellent technical input into permit and petition reviews. In addition, IEPA has assigned two people to work part-time on UIC land ban reviews. This was to fill the position left vacant by the reassignment of one of the full time senior UIC permit reviewers.

The end-of-year evaluation also revealed some areas of concern. Chief among these was the lack of UIC experience of the new permit reviewers. It was also found that some inconsistencies in the permitting process had resulted in permits that appeared to apply different standards to different facilities. Records revealed that each permit reviewer employed a different criteria for evaluating wells within the area of review and mechanical integrity testing procedures. It was apparent that a more intensive oversight of individual permitting and petition evaluations is needed given the past inconsistencies and the relative inexperience of the newer UIC staff.

INTRODUCTION

The Illinois Environmental Protection Agency (IEPA) received primacy on February 1, 1984, to administer the State's Class I, III, IV, and V wells. The IEPA regulates a universe of nine Class I wells, six of which inject hazardous wastes and approximately 1,700 Class V wells identified to date. There have been no Class III wells identified in the State and there are no

known Class IV wells. Regulation of injection wells is the responsibility of the Land Pollution Control Division of the IEPA.

During the week of October 11-14, 1988, an end-of-year evaluation was conducted at the IEPA offices in Springfield, Illinois. Representatives from the Region V UIC Section conducted the evaluation through review of IEPA files and discussions with IEPA staff. Because Region V will be making decisions on land ban petitions during FY 1989, this end-of-year evaluation included a particular focus on activities at Class I Hazardous Waste facilities. Other program issues which were reviewed were: (1) resources devoted towards Class I permitting; (2) the organization, technical capabilities and experience of IEPA reviewing personnel; (3) the review process, decision oversight, and management and supervision of the decision process; (4) the Class V program; (5) reporting, data management, and program administration. The participants in the end-of-year evaluation are listed below.

Participants

| | | |
|-----------|-------------------|--------------|
| Region V: | John Taylor | 312/886-4299 |
| | Lynn Crivello | 312/886-2929 |
| | Harlan Gerrish | 312/886-2939 |
| | George Hudak | 312/353-4142 |
| | Arthur Moretta | 312/886-1497 |
| Illinois: | William Child | 217/782-6760 |
| | William Radlinski | 217/782-6760 |
| | Larry Eastep | 217/782-6760 |
| | Glenn Savage | 217/782-6760 |
| | Harry Chappel | 217/782-6762 |
| | Ed Bakowski | 217/782-6760 |
| | Tom Cavanaugh | 217/783-6760 |
| | Jill Withers | 217/782-3258 |
| | John Richardson | 217/782-6761 |
| | Doug Clay | 217/782-6760 |

PROGRAM ASSESSMENT

Class I Permitting

At the present time there are 7 Class I facilities in Illinois, with 9 existing wells. During FY 1988, permits were issued for Cabot #1, Cabot #2, and USI, a permit denial was issued to NGPL, and a major modification was made to the Allied permit. The result of these actions was the State's meeting their program targets for the first time. At the present time, permit determinations have been made for all Class I wells, with the exception of the Velsicol #2 well.

The Velsicol facility in Marshall, Illinois is presently in negotiations with the Superfund program to reach agreement on clean-up of the facility.

It is anticipated that the Class I injection well at the facility will be used in the remedial actions (see Attachment A). The State has committed to making a permit determination on this well in the first quarter of FY 1989.

In reviewing the program, however, Region V technical reviewers noted some problems. Chief among these was the lack of consistency and oversight in the permitting decisions. It was noted that in demonstrating mechanical integrity, different facilities had differing standards. Some facilities were required to maintain the required annulus pressure for 60 minutes while others were allowed to demonstrate mechanical integrity under standards that were less strict (see Attachments A, B, and C). In one instance, a well that was authorized to use the less strict 30 minute test passed, when it would have failed the stricter 60 minute test (see Attachment C).

In addition to mechanical integrity tests, reviewers noted that there was a wide variance among the area of reviews that were conducted in the course of permitting evaluations. Although the regulatory requirement is for a 1/4 mile area of review, Region V reviewers were told by some State personnel that 2 mile area of reviews were conducted according to an unwritten policy. Region V reviewers noted that in one case, Velsicol Chemical WDW #2, the zone of endangering influence was calculated to be 11,441 feet, and that within this area there were several wells that had been drilled to or through the injection zone for which no plugging records were available. File records showed that wells within this area were not reviewed (see Attachment A).

At the time of the midyear evaluation, there were two experienced permit reviewers assigned to UIC permitting; since that time, one of the reviewers has moved out of the program and two other reviewers have been assigned to work part-time on UIC. Although the new reviewers are relatively inexperienced in UIC areas, each has been given sole responsibility for reviewing permit applications, modifications, and land ban petitions. Some limited assistance has been provided by the previous senior UIC reviewer; this or other types of oversight and assistance needs to be continued at least until the new reviewers are fully familiar with injection well technologies and review processes.

Region V reviewers found that there was some question as to the thoroughness of the IEPA's review of technical information submitted as part of the permit application. It appeared that IEPA relied solely upon the Illinois Geological and Water Surveys for technical determinations. Although these two agencies are an excellent source of expertise, their evaluations should not be adopted by IEPA without some review.

Recommendations and Conclusions:

1. The IEPA needs to insure that permit applications and modifications receive a thorough technical review. As such, it is imperative that the staff receive the education, guidance, and technical support they need to make correct determinations, and that there is adequate oversight to insure that decisions made by reviewers are correct, and in keeping with State and Federal requirements and guidelines.

2. Policies and guidelines on permit elements, where they are not specifically spelled out in the regulations or where they differ from the regulations, should be documented.
3. Mechanical integrity tests should be run according to one standard. Any variation from the set standard should be documented and supported by data and critical evaluations.
4. Information received from the Illinois Geological and Water Surveys should be independently reviewed by IEPA personnel. At the present time, there is no evidence that Survey information is being reviewed.

Land Ban Petition Review Process

During FY 1988, the IEPA established a contractual agreement with the Illinois Geological and Water Surveys, whereby the Surveys provide technical assistance in the review of land ban petitions. At the present time, two of the four Class I Hazardous Waste injection facilities in Illinois have submitted petition documents. The land ban petitions submitted by Allied and LTV are now in the review process; a petition is expected to be submitted by Cabot by the end of the year.

To date, the review process has required the Illinois Surveys to submit their comments to the Illinois EPA. Subsequently, the IEPA would consolidate these comments with its own, and submit the comment package to Region V. Thus far, comments have been submitted by the IEPA on the petition submitted by Allied Chemical. The comments were reviewed by Region V and found to be very thorough, although in some cases, comments were repetitive or not pertinent to the land ban demonstration.

In the initial stages of the petition review process, it was expected that the State would conduct an initial completeness review, followed by a technical review. This policy has now been revised; only one review of the petition document, incorporating both completeness and technical reviews, is expected. In addition, reviews by the Surveys will be sent to IEPA who will forward them unchanged to Region V. The IEPA will no longer be required to incorporate the Survey's comments into their review response. Instead, the IEPA will submit their comments and the Survey's comments as separate documents.

As discussed earlier, each petition is assigned to a single reviewer, although two of the reviewers are relatively new to UIC technologies. Given this, it is essential that a close oversight of these reviews be maintained.

Based upon the initial review of the Allied petition, there is the potential for problems to develop among the various petition reviewers with respect to the technical adequacy of the petition. It is very important that the review of the petitions be consistent, relevant, timely, and in general agreement among all reviewers. Several meetings with the IEPA, ISGS, and

ISWS have been scheduled for the near future in order to address these issues and to prevent them from becoming serious problems.

Recommendations and Conclusions

1. The IEPA needs to provide training and technical support to new UIC staff. In addition, there should be oversight on the petition reviews to insure that correct determinations are made which are in keeping with Federal rules and guidelines.
2. Petition reviews should employ a team approach. In this way, less experienced staff can gain assistance from the more experienced members, and each person can contribute his expertise or strength to the review. Region V has found this approach to be extremely valuable, while not necessarily consuming much review time for the assisting member of the team. Under this approach, the primary review, compilation of comments and contacts with the company and other parties is still performed by the primary reviewer.

Since at the present time there is only one petition to be reviewed, this should not present an unreasonable work load. In addition, since the petition process will probably extend for a long period of time, having other members of the staff familiar with each petition insures that the process will not be set back by staff changes should they occur.

Class V Program

It appears that a number of actions which impact Class V wells may be occurring at the State level (see Attachment D). These actions are being taken by other programs, with Class V results being an incidental benefit. To ensure a more directed approach which would better utilize existing resources, a point of contact needs to be established in the Division of Land Pollution Control. This person would be the focal point for coordinating, tracking, and documenting Class V activities within the State, as well as, maintaining contact with the Regional Class V effort to assure that the State plays an appropriate role in future Class V efforts.

The State expressed a willingness to establish such a position, however, at the present time, resources are not available to support a Class V coordinator, given the overriding commitments of Land Ban. If however, additional Federal funds become available, Region V believes that some resources could be provided to the State to establish a Class V coordinator/contact.

Recommendations and Conclusions:

1. According to State representatives, there is a substantial amount of Class V work being done. However, due to the fact that Class V activities are usually a by-product of other program activities and are not tracked by the Land Pollution Control Division, these activities go

unreported to the UIC program. As a result, the State does not receive credit for the Class V activities that occur.

2. It is recommended that the Land Pollution Control Division designate a Class V contact. The position would entail documenting all Class V activities conducted throughout IEPA as well as serving as a coordinator and contact for Region V.

Enforcement

The IEPA inspects all Class I wells on an annual basis. These inspections are thorough and well documented. Any violations that are found as a result of inspections or monitoring reports are documented and brought to the attention of the owner or operator through a Compliance Inquiry Letter. In the past, IEPA was able to gain compliance either through the permitting process or as a result of Compliance Inquiry Letters and Pre-enforcement Conferences.

During the Region V review, however, it was noted that as of February, 1989, facilities that appealed the State's denial of their permits and continued to operate during the appeal, will lose their authorization by rule and will have to cease operation. There are two facilities in this situation, both of which are operated by Natural Gas Pipeline Company, and both of which are nonhazardous facilities. Since the facilities are nonhazardous, the State is reluctant to devote the extensive resources required to begin formal enforcement actions. At the time of the review, it was suggested that Region V issue Administrative Orders as part of a cooperative enforcement action.

Recommendations and Conclusions:

1. The IEPA has been successful in maintaining an effective enforcement program.
2. The IEPA should consider a cooperative enforcement action with Region V to address wells that operate in violation of the authorization by rule provision.

Data Management

Overall, the IEPA has an adequate data management system to track its program activities. For the most part, an extensive system is not generally used for the nine Class I and IV wells, however, the State has developed a system to track and record Class I activities.

A data management system has also been developed for Class V activities. This system, however, is not as comprehensive and up to date as the Class I system. The addition of a Class V coordinator to track, record, document, and update the Class V data base would be extremely useful.

Recommendations and Conclusions:

1. Overall, IEPA's data management system is more than adequate to track activities on Class I and IV wells; however, Region V evaluators found that little updating or initiative had been devoted to developing its present Class V data management system.
2. The IEPA needs to designate a Class V coordinator. It should be this person's responsibility to collect information on Class V wells throughout the IEPA, and to update the Class V data base as necessary.

ATTACHMENT A

Velsicol Chemical Corporation Review

The file review of Velsicol Chemical Corporation's WDW #2 revealed serious problems with the area of review. The zone of endangering influence for this well, which the IEPA will use in lieu of a fixed radius, was calculated to be 11,441 feet. Within this area, there are several wells that have been drilled to or through the injection zone that have been abandoned but have no plugging record, or which have been plugged improperly.

Although a final permit for WDW #2 has not yet been issued, the draft permit stipulations state that the "... well will be immediately shut-in... if upward fluid migration occurs through the well bore of any unknown, improperly, or unplugged well(s) due to injection of permitted fluid..." This, however, is a general stipulation not specifically related to the wells in question and, in any case, does not adequately address the problem.

In addition, some of the wells within the area of review of well #2 are also within the area of review of WDW #3. This well was permitted on November 3, 1986, and, with respect to the wells in the area of review, has permit stipulations identical to those for WDW #2.

IEPA personnel must be made aware that any well within the area of review of an injection well that penetrates the injection formation must have that formation isolated from fresh water. It is the responsibility of the operator to submit a plan for remedial action in a case such as this, and it is the responsibility of the IEPA to critically evaluate the proposal based on its technical merits.

The annulus pressure test used to demonstrate part I of mechanical integrity has been applied inconsistently to wells #2 and 3. Permit stipulations for WDW #2 allow a 3 percent decline in pressure over 60 minutes, while the stipulations for WDW #3 have a much less strict standard of 3 percent pressure loss over 30 minutes. There is no technical reason for making this distinction. Apparently, the IEPA is using it as a negotiating point for permit issuance. The IEPA must decide on one specific standard for the pressure test and apply it uniformly.

ATTACHMENT B

Cabot Chemical Corporation Review

Cabot Chemical Corporation (CCC) operates two Class I injection wells for the disposal of waste acid generated on site. The injection zone is a dolomite which appears to have a secondary porosity system. The confining zones are dense carbonates. The two wells are in close hydraulic connection, with injection in one causing an immediate pressure rise in the other. Waste is frequently injected at rates greater than 250 gallons per minute. At low rates, about 30 gpm, the well accepts the injectate on a vacuum. When the wells are idle, the piezometric surface in the area of the well is approximately equal to that of the lowest USDW.

Final permits were issued for WDW #2 on February 4, 1988, and for WDW #1 on September 30, 1988. Applications for these permits were first received on February 15, 1985. Since that time there has been a fairly steady correspondence between the IEPA and CCC aimed at clarifying positions and bringing the CCC operations into compliance with the new Illinois Class I program guidelines. These permits are conditional on the submission of an acceptable groundwater monitoring plan or an acceptable alternative and a waste analysis plan within 45 days, and the plugging of the Walter J. Buck well before December 1, 1988.

The plugging of the Buck well is unlikely to be accomplished within the allotted time. Two months is probably insufficient time to negotiate access with the landowner and then to make arrangements for equipment and carry out the procedure. The submission of the waste analysis and groundwater monitoring programs following permit acceptance might also pose problems.

Another problem exists in the amount of critical review of technical data and results of computations. For instance, all correspondence has talked of a net injection zone thickness measured in hundreds of feet. In fact, based on a radioactive tracer survey, almost 100 percent of the injected waste exits the well bore within a five foot interval at the bottom of the casing. A porosity log also indicates that this is the principal porous and permeable zone within the open hole interval. Below this there are only two to three foot intervals of what may be cavernous porosity based on the caliper and porosity log readings.

The failure to ascertain realistic reservoir parameters and to insist that contradictory information be resolved may have serious consequences. The clearest evidence is the apparent lack of any attempt to characterize the injection zone. Early in the permitting process an area of review (AOR) was calculated. The reviewer at the Illinois State Water Survey (ISWS) took issue with the method and results of the calculations. These calculations were very nebulous and CCC ultimately chose to use an AOR having a radius of 2 1/2 miles which would be larger than any calculated. Calculations by the ISWS had shown increases of pressure in the range of 190 to 210 psi at that distance. An AOR having a 2 1/1 mile radius has been accepted although there has not been a resolution of the different calculations.

In fact, as was cited previously, the pressure within the injection zone has not increased significantly and there is no "cone of endangering influence".

ATTACHMENT C

LTV Review

Review of the LTV files produced several area of concerns for not only this facility, but at all facilities. The concerns are:

- 1) On several draft permits, LTV included stated terms of MIT for 3 percent loss over an hour but the finals were changed to 3 percent loss in a 30 minute period.
- 2) The condition mentioned in number one resulted in LTV passing an MIT on December 1, 1987, in which the well was pressured to 1000 psi and lost 115 psi in a 4 hour period. If the test was conducted with a 3 percent loss per hour, it would have failed. No explanation was given for the loss of 115 psi over 4 hours even though the well had not injected for several days. During normal operation, the annulus pressure is held at around 450 psi with normal fluctuation of ± 10 to 20 psi.
- 3) The financial records are not kept with the facility records and UIC staff was unsure who dealt with them. It was ascertained that the financial information was reviewed by RCRA counterparts (Harry Chappel). Harry stated that his Unit, in FY 1989, may review only facilities that have other RCRA units. This puts the non-hazardous facilities at risk of not being reviewed.
- 4) LTV filed for Chapter 11 Bankruptcy in late 1986. There was no evidence that the bond was still valid. The bonding company or LTV should file a document showing that the premium was paid for the coming year.

Based on the above, we would recommend the following:

- 1) The IEPA should use only one test value for MIT either 3 percent loss per 30 minutes or 3 percent loss per hour.
- 2) The IEPA UIC should track the financial information more closely and document in the facility file.
- 3) The IEPA UIC should monitor the MIT more closely so as to account for steady loss during the test as equipment problems surface (LTV 12/11/87).

ATTACHMENT D

Class V Review

Review of the Class V program for the UIC Section indicates that the UIC staff involvement has been limited. During this Fiscal Year, the only facilities added to the inventory have come from two companies that self reported. The activity described in the mid-year review has not yet generated any Class V activities. Discussions were held with Bob Clark of the Division of Public Water Supplies and Bill Radlinski of the Division of Land Pollution Control (LPC) regarding what information they will provide to the UIC Section. This information will be transmitted by rather informal verbal agreements as resources permit. Our current understanding of the process is as follows:

- 1) The Division of Public Water Supplies under the Wellhead Protection Act (Senate Bill 1482 July 14, 1987) will inventory all 29,080 public water supplies (PWS) in Illinois by taking low level air photos (1" = 400') and delineating potential sources of contamination within 1000' of the PWS. The 1000' radius will account for approximately 72 acres per PWS which will account for 5 percent of the land area of the State being covered.
- 2) The Division of Public Water Supplies will prioritize their work based on the sample taken from PWS wells that show contamination.
- 3) The Division of Land Pollution Control, Field Operations Section will be required to do the field work to determine if the contamination is related to Class V or other sources. This Division has a limited budget and work is resource intensive. Each 72 acre area has an average of 5 to 7 sites identified by air photos and numerous ones that are not identified.
- 4) The Field Operations Section will then turn the Class V over to the State's UIC personnel for further action: Currently, IEPA has no procedures for follow-up work, but they have broad authority under Title 35 Section 704.121 which is a functional equivalent of 40 Code of the Federal Regulations Section 144.12 and also under the Environmental Protection Act Illinois. They have set limits for some contaminants.

Based on the above, we recommend the following:

- 1) The Division of Land Pollution Control should, as resources permit, expand their inventory of Class V wells by the use of contract personnel to deal with mass mailings to industrial companies.
- 2) The IEPA UIC should track the Class V activities by the use of 7520-1 forms and report quarterly.



217/782-6762

January 24, 1989

Charles Sutfin, Director
Water Division
USEPA -- Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Sutfin:

This letter is in response to the end-of-year evaluation for FY88 as transmitted in your letter dated December 23, 1988 and received January 3, 1989.

We accept this review as indicating that the State was found to be making progress in managing an effective UIC program.

We also noted your concern about specific aspects of the program and it is felt that certain comments are in order.

First of all, one third of your file review concerns were for a well which initially was permitted in FY87. Any comments relating to that decision would have been much more useful at that time. Regardless, USEPA staff members participated in discussions about those issues prior to permit issuance.

Additionally, there seems to be much concern over internal personnel assignments and consistency. Training and inter-cooperation is ongoing. We are sure, at the State level, consistent and quality reviews are occurring. Since Illinois was assigned three different USEPA permit coordinators in FY88 it may well be lack of consistent guidance and expectations which is the source of any problem perceived by USEPA. The lack of consistency is best pointed out by the following comment from our mid-year review:

"Land Ban

The State has shown a great amount of flexibility, initiative, and technical expertise in evaluating the petition information received to date. Although final regulations and guidance are not available, the State has proceeded to perform evaluations and participate fully in the development of a petition review program."

As compared with the current end-of-year excerpt.

"Land Ban Petition Review Process

... The comments were reviewed by Region V and found to be very thorough, although in some cases, comments were repetitive or not pertinent to the land ban demonstration."



Page 2

These quite different opinions were expressed on the same review. Absolutely no petition reviews were done between the mid-year and end-of-year period.

Regarding your position on a team approach, your staff has been told that all reviewers will read all petitions and comment. Reviewers will also attend all meetings, when available. This was our management decision and we will continue to ensure the best possible review with the resources at hand.

As far as applying "differing standards", we would state that the pressure test referred to in Attachment C for 30 minutes was based on USEPA unwritten guidance which was later changed to 60 minutes. The IEPA has used a 3 percent loss per 60 minutes since March 1987. Since no requirements nor written policy of USEPA exist, we make site specific adjustments, and remain convinced that all mechanical integrity tests are appropriate and justified.

In the matter of Area of Review, past permit decisions on wells in the Area of Review were made with input from staff at Region V of the USEPA. Technical reviews and draft permits were discussed at monthly UIC meetings prior to mailing of Agency correspondence. Information on wells in a 2 1/2 mile area must be submitted with the application. However, Federal regulations allow for use of a calculated area of review or a fixed area of review of 1/4 mile. Illinois regulations parallel the USEPA regulations for Area of Review. In the past, the regulations have given the applicant the right to use a 1/4 mile area of review regardless of the calculated Area of Review. Written guidance should be provided by USEPA on review of wells in the Area of Review if the State is to make permit decisions which contradict the regulations.

Regarding Class V, current funding levels do limit our ability to conduct and document Class V activities. Workloads in other UIC areas will not necessarily decline sufficiently to allow a significant increase in Class V work.

In general, the evaluation contained other errors, and mistatements which, it seems, are geared more toward increasing state activities without a parallel increase in funding support.

Sincerely,

A handwritten signature in cursive script that reads "William C. Child".

William C. Child, Manager
Division of Land Pollution Control

WCC:EB:jk/261k,6-7

cc: B. Killian
T. Cavanagh
John Taylor
USEPA

Intra-Division Route Slip

WATER DIVISION

SUBJECT:

CONTROL NO:

DUE DATE:

(Please attach this slip to the blue tissue.)

Ed - A little difference of opinion. see truck's question. JSC 1/30/99

| | ACTION | INFO |
|--------------------|-------------|-------|
| CHARLES H. SUTELIN | _____ | _____ |
| DALE S. ROYSON | _____ | _____ |
| HOWARD ZAR | _____ | _____ |
| TODD A. CAYER | _____ | _____ |
| KENNETH A. FENNER | _____ | _____ |
| JOSEPH F. HARRISON | _____✓_____ | _____ |
| JERRI-ANNE GARL | _____ | _____ |
| STEPHEN H. RICH | _____ | _____ |
| CHARLES O. BRASHER | _____ | _____ |
| RICHARD F. FREEMAN | _____ | _____ |

John T ✓
I think we need to respond to this M.A. sufficiently positive manner to put issues to rest while not eroding our core positions.
 Check (✓) indicates copy transmitted to addressee. Number indicates copying sequence.

REMARKS:
Do ~~we~~ we need to "clarify" our evaluation?

RECEIVED

JAN 24 1999

WISCONSIN
 DIVISION

FROM

8

DATE

1/30



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

230 SOUTH DEARBORN ST.

CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

FEB 17 1989

5WD-TUB-9

William C. Child, Manager
Division of Land Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, Illinois 62794-9276

Dear Mr. Child:

Thank you for your letter of January 24, 1989, in response to the end-of-year evaluation for Fiscal Year (FY) 1988. I understand that my staff met with you on January 26, 1989, and discussed many of the same issues you addressed in your letter. I am happy to hear that many of your issues were resolved at that time.

Overall, I am pleased with the progress you have made to implement the recommendations of the end-of-year evaluation, including the team approach to technical reviews. I am also pleased by the close cooperation that your staff has shown in working with mine on the LTV land ban petition review.

In regard to your questions on land ban petition reviews, we would like to note that our Agencies were much more heavily involved in the land ban process by the end-of-year evaluations than they were at the mid-year. During this six month period, final regulations were issued and approval requirements were clarified. Accordingly, we felt it was necessary at that time to review and assess in-depth the well files for which land ban petitions were expected in order to determine if the facilities were likely to meet Federal requirements for petition approval and to identify what issues might arise during the petition reviews. While this may have necessitated reviewing some past decisions in view of petition approval requirements, I feel that both of our Agencies are now in a better position to focus on the major areas of concern with respect to each facility when its petition is received.

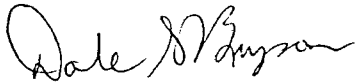
Upon further evaluation of your concern regarding mechanical integrity tests, we found that both the USEPA guidance for the Direct Implementation (DI) program and the State of Ohio utilize a standard 60 minute annulus pressure test. In light of that, we feel the IEPA should consider using 60 minutes as a uniform standard for all Class I wells. We would be happy to discuss what technical criteria could justify the use of a 30 minute test at the mid-year review. For your information, we have enclosed Regional Guidance #5 which establishes the DI program standards.

In regard to the area of review (AOR), we would like to clarify that the regulations applicable at the time of the review allowed the State, not the applicant, the right to use either a fixed radius of one-quarter (1/4) mile or the calculated zone of endangering influence. Please note that the

regulations have been revised to require an AOR having a minimum radius of 2 miles and/or encompassing the zone of endangering influence for Class I hazardous waste wells at 40 C.F.R. §146.63. We do not therefore anticipate any confusion on this matter in the future. At the mid-year review, we would like to discuss your plans to address this change in regulations and its impact on permit modifications.

If you feel any of these issues will need to be discussed in more depth at the mid-year, please feel free to contact Rita Bair, of my staff at (312) 886-2929 for inclusion on the agenda.

Sincerely yours,



for Charles H., Sutfin
Director, Water Division

cc: Cavanagh (IEPA)
Radlinski (IEPA)